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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/586,530	05/31/2000	Tuqiang Ni	LAM2P282	6020

25920 7590 12/02/2002

MARTINE & PENILLA, LLP  
710 LAKEWAY DRIVE  
SUITE 170  
SUNNYVALE, CA 94085

EXAMINER

PEREZ RAMOS, VANESSA

ART UNIT	PAPER NUMBER
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1765

DATE MAILED: 12/02/2002

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Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/586,530

Applicant(s)

NI ET AL.

Examiner

Vanessa Perez-Ramos

Art Unit

1765

-- The MAILING DATE of this communication appears in the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_ 6) ☐ Other: \_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over .  
Litvak (U.S. 5,499,733) in view of Chao et al. (U.S. 5,780,315).

In regard to claims 1 and 6-7, Litvak discloses a method for determining an etchpoint, comprising: directing radiant energy at two or more wavelengths onto the layer to be etched (col. 8, lines 18-20); and detecting the endpoint based on an analysis of signals emitted vs. wavelength (col. 12, lines 45-67).

Litvak does not disclose detecting intensity maximums reflected at various wavelengths in relation to "selected endpoints".

Chao discloses an endpoint detecting method based on the measurement of maximum intensities (col. 5, lines 6-10).

It is the Examiner's position that it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Litvak by detecting intensity maximums, as per Chao, because this is a well known step in the art, as evidenced by Chao's disclosure.

In regard to claim 2, the variation of process parameters such as the wavelength would have been obvious to one skilled in the art at the time of the invention with the anticipation of determining the best process mode.

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In regard to claim 3, Litvak discloses that at least two interference maxima occur (col. 8, lines 19-20).

In regard to claims 4-5, Litvak discloses the use of transparent materials (col. 7, lines 48-50).

In regard to claims 8-14, these claims differ from claims 1-7 above by utilizing three or more wavelengths. Litvak discloses a process where "various" wavelengths are detected (col. 12, lines 63-64), which reads on Applicant's "three or more".

### ***Response to Arguments***

3. Applicant's arguments filed 9/18/02 have been fully considered but they are not persuasive.

In regard to Applicant's argument that what is claimed is not to detect intensity maximums, but specific combinations, and that there is no reference of detecting reflected maximums at different wavelengths to determine the endpoint, it is the Examiner's position that the teachings of Litvak in view of Chao read on Applicant's claimed invention. As discussed previously, Litvak discloses the detection of signals at different wavelengths to determine the endpoint. Litvak however does not determine these signals specifically at the wavelengths' maximums, but at other points. Chao, however, teaches that detecting signals at intensity maximums is common practice in the art. Therefore, the claimed invention is unpatentable in view of the combined teachings of Litvak and Chao.

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4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vanessa Perez-Ramos whose telephone number is 703-306-5510. The examiner can normally be reached on Mon-Fri 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Benjamin Utech can be reached on 703-308-3836. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-7718 for regular communications and 703-305-3599 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-306-5665.

VPR  
November 26, 2002

  
**ROBERT KUNEMUND**  
**PRIMARY EXAMINER**

Vanessa Perez-Ramos  
Examiner  
Art Unit 1765